

Having thus described the preferred embodiments, what is claimed is:

1. A method for generating an interactive enhanced electronic newspaper file, said method comprising:

a) receiving input data in a select input data format that represents a current page of a corresponding hardcopy newspaper, said current page having a predefined page type selected from one of a plurality of different page types;

b) parsing said input data to extract therefrom page information data that represent a general layout of said current page of the corresponding hardcopy newspaper;

c) storing said page information data extracted from said input data in a current page information database;

d) selecting one of a plurality of different predefined page information databases that correspond respectively to said plurality of different page types based upon said predefined page type;

e) deriving a preprocess file for said current page using data from said current page information database and data from said select one of said plurality of different predefined page type information databases, said preprocess file defining said general layout that corresponds to said current page of said corresponding hardcopy newspaper and defining at least select portions of said layout to be links that are active and selectable by an end user when said current page output data file is displayed to an end user on a computer display terminal;

f) inputting said preprocess file and said input data that represents said current page of said corresponding hardcopy newspaper into an interpreter that generates a current page output data file that defines said current page of said corresponding hardcopy newspaper according to said layout and in terms of a select output data format different from said input data format, said current page output data file including output data that are associated with said links so as to be active and selectable by an end user when said current page output data file is displayed to an end user on a computer display terminal to link said current page output data file to one of: (i) another output data file; (ii) a supplemental data file; and, (iii) an auxiliary process;

g) storing said current page output data file; and,

h) repeating steps a) through g) for all pages of said hardcopy newspaper to generate and store a plurality of current page output data files.

2. The method as set forth in claim 1, further comprising, after step h):  
combining said plurality of different current page output data files into a single combined data output file.

3. The method as set forth in claim 2, further comprising:  
storing said single combined data output file on one of a CD-ROM and a computer server for access by end-users.

4. The method as set forth in claim 1, wherein said step of parsing said input data to extract page information data comprises extracting at least two of: (i) text data; (ii) text position data; (iii) font information data; (iv) image position and size data; and, (v) bitmap data that define a bitmap of said current page of said corresponding hardcopy newspaper.

5. The method as set forth in claim 1, wherein said step of parsing said input data to extract page information data comprises extracting: (i) text data; (ii) text position data; (iii) font information data; and, (iv) image position and size data.

6. The method as set forth in claim 5, wherein said step of parsing said input data to extract page information data further comprises extracting: (v) bitmap data that define a bitmap of said current page of said corresponding hardcopy newspaper.

7. The method as set forth in claim 5, wherein said step e) of deriving a preprocess file comprises:

processing said extracted page information data to locate a presence and a location of select page definition information on said current page of said corresponding hardcopy newspaper.

8. The method as set forth in claim 7, wherein said select page definition data identified and located by said step of processing said extracted page information data comprises at least a plurality of: (i) refer text that refers a reader to a page other than said current page of said corresponding hardcopy newspaper; (ii) headline text that introduces a story; (iii) URL text that defines a URL for a web site; (iv) e-mail address text that defines an e-mail address; (v) word location data that define a location for each word of text on said current page of said corresponding hardcopy newspaper; (vi) character location data that define a location for each constituent character of each of said words of text on said current page of said corresponding hardcopy newspaper; (vii) headline font data that facilitate identification of headlines on said current page of said corresponding hardcopy newspaper; and, (viii) refer font data that indicate a presence of text that refers a reader to a page other than said current page of said corresponding hardcopy newspaper.

9. The method as set forth in claim 7, wherein said select page definition data identified and located by said step of processing said extracted page information data comprises: (i) refer text that refers a reader to a page other than said current page of said corresponding hardcopy newspaper; (ii) headline text that introduces a story; (iii) URL text that defines a URL for a web site; (iv) e-mail address text that defines an e-mail address; (v) word location data that define a location for each word of text on said current page of said corresponding hardcopy

newspaper; (vi) character location data that define a location for each constituent character of each of said words of text on said current page of said corresponding hardcopy newspaper; (vii) headline font data that facilitate identification of headlines on said current page of said corresponding hardcopy newspaper; and, (viii) refer font data that indicate a presence of text that refers a reader to a page other than said current page of said corresponding hardcopy newspaper.

10. The method as set forth in claim 8, wherein said links defined by said preprocess file comprise links associated with at least said refer text, said URL text and said e-mail address text.

11. The method as set forth in claim 8, further comprising:  
using said headline font data to derive story location data that define locations of stories on said current page of said corresponding hardcopy newspaper.

12. The method as set forth in claim 11, wherein said step of deriving story location data comprises:

identifying a font that indicates a story headline;  
identifying a font used for story text; and,  
identifying a change of font between said story text and a subsequent headline.

13. The method as set forth in claim 8, wherein said select input data format is Adobe PostScript, said select output data format is Adobe portable document format (PDF) and said preprocess file is a PDFmark file.

14. The method as set forth in claim 13, wherein said step f) inputting said preprocess file and said input data into an interpreter comprises inputting said preprocess file and said input data into an Adobe Acrobat Distiller interpreter program.

15. The method as set forth in claim 10, wherein:  
said refer text links said current page output data file to another output data file to be displayed to an end user;  
said URL text links said current page output data file to a web browser; and,  
said e-mail address text links said current page output data file to an e-mail program.

16. The method as set forth in claim 10, further comprising:  
storing supplemental image data that relate to image data that define an image of said current page output data, wherein said links defined by said preprocess file further comprise a link that is associated with said image of said current page output data, whereby said supplemental image data are displayed to

an end user when said end user selects said image of said current page output data file.

17. The method as set forth in claim 7, wherein said select page definition data identified and located by said step of processing said extracted page information data comprises at least one advertisement, and wherein said links defined by said preprocess file comprise a link to said advertisement, said method further comprising associating a URL with said at least one advertisement whereby an end user navigates to said URL that is associated with said advertisement when the advertisement is selected.

18. A method comprising:

- defining a newspaper page in an input data file having a first data format;
- extracting from said input data file at least a plurality of: text data; text position data; font information data; image position and size data; page refer data; URL data; e-mail data; story location data; and, advertisement location data;
- storing said extracted data in a current page information database;
- selecting one of a plurality of predefined page type information databases that respectively include data that relate to particular page types;
- using data from both said current page information database and said selected predefined page type information database to define a template file of said newspaper page; and,

generating an output data file having a second data format that is different from said first data format by converting a copy of said input data file to said second data format based upon said template file, said template file defining at least one link in said output data file that links data of said output data file to at least one of: a related output data file; a supplemental data file; and, an auxiliary process.

19. The method as set forth in claim 18, wherein said supplemental data file comprises at least one of a digital image data file and an audio data file that relates to information represented by said output data file.

20. The method as set forth in claim 19, wherein said auxiliary process comprises one of a web-browser and an electronic mail program.